1. (Amended) A method comprising:

receiving a serial data stream;

sampling each data unit in the data stream N times to obtain multiple data samples per data unit;

detecting edge transitions between adjacent data samples; and

selecting a first data sample, from among the multiple data samples and representative of the current data unit, based on the location of edge transitions over the current and previous data cycles and the location of an ideal data sample to perform data recovery.

2. (Amended) The method of claim 1 wherein the selected first data sample is determined by the edge transition in the previous or current data cycles which is closest to the ideal data sample.

03

3. The method of claim 1 wherein the N samples per data unit are taken at different locations along the cycle of each data unit.

4. (Amended) The method of claim 1 wherein the ideal data sample is within the current data unit cycle and a distance of N samples from the previously selected data sample.

5. (Amended) The method of claim 1 wherein selecting the data sample includes,

selecting the first data sample to lie in the direction of the mid-point between the detected edge transition and the next expected edge transition and a distance of N-1, N, or N+1 samples from a previously selected data sample, whichever is closest to the mid-point.

6. (Amended) The method of claim 1 wherein selecting the first data sample based on the location of edge transitions over the current and previous data unit cycles includes selecting a data sample based on 2*N consecutive data samples across the current data unit cycle and the previous data unit cycle.

7. (Amended) The method of claim 1 wherein if no edge transitions are detected the selected first data sample is the ideal data sample.

8. (Amended) The method of claim 1 wherein if only one edge transition is detected, that edge transition determines the selected first data sample.

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9. (Amended) The method of claim 1 wherein if multiple edge transitions are detected and all correspond to the same data sample, then that data sample is selected as the first data sample.

10. (Amended) The method of claim 1 wherein if multiple data edge transitions are detected and they correspond to different data samples, then the selected first data sample is the ideal data sample.

11. The method of claim 1 further comprising:

maintaining a list of the M previous selected data samples, where M is an integer value.

12. (Amended) The method of claim 1 wherein in selecting the first data sample, as between two equally likely data sample

locations, the data sample location most recently selected in previous cycles is chosen.

13. (Amended) An apparatus comprising:

a sampling device to sample data units of a serial data stream N times at different points in each data unit, where N is an integer value;

an edge detector coupled to the sampling device to detect edge transitions between consecutive data unit samples; and

a selection controller coupled to the edge detector to receive detected edge transitions from the edge detector and select a first data sample to represent the current data unit according a predefined decision algorithm for data correction employing the current and previous data unit cycles and an ideal current data sample.

14. (Amended) The apparatus of claim 13 wherein the ideal current data sample is located within the current data unit cycle and a distance of N samples from a previously selected second data sample in the previous data unit cycle.

15. The apparatus of claim 13 wherein the value of N is six.

16. (Amended) The apparatus of claim 13 wherein the selection controller selects the first data sample based on a first edge transition for either the previous or current data cycles, whichever edge transition is closest to the ideal current data sample.

17. (Amended) The apparatus of claim 13 wherein the selection controller selects the first data sample to lie in the direction of the mid-point between a detected first edge

transition and a next expected edge transition and a distance of -1, 0, or +1 samples from the ideal data sample location, whichever is closest to the mid-point.

18. (Amended) The apparatus of claim 13 wherein if no edge transitions are detected by the edge detector, the selection controller selects the ideal data sample location to obtain the first data sample.

19. (Amended) The apparatus of claim 13 wherein if only one edge transition is detected by the edge detector then the selection controller selects the first data sample to lie in the direction of the mid-point between a detected first edge transition and a next expected edge transition and a distance of -1, 0, or +1 samples from the ideal data sample location, whichever is closest to the mid-point.

20. (Amended) The apparatus of claim 13 wherein if multiple edge transitions are detected by the edge detector and all transitions correspond to the same first data sample, then the selection controller selects that first data sample as the next data sample.

21. (Amended) The apparatus of claim 13 wherein if multiple data edge transitions are detected by the edge detector and they correspond to different data samples, then the selection controller selects the first data sample to correspond with to the ideal data sample location.

22. The apparatus of claim 13 further comprising:

a storage device to maintaining a list of the M previous selected data samples, where M is an integer value.

23. (Amended) The apparatus of claim 13 wherein, as between two equally likely data sample locations, the selection controller selects the first data sample location that was most recently selected in previous cycles.

24. (Amended) A machine-readable medium having one or more instructions to perform data recovery, which when executed by a processor, causes the processor to perform operations comprising:

sampling each data unit in a data stream N times, where N is an integer value, at different locations along each data unit, to obtain multiple data samples per data unit;

detecting edge transitions between adjacent data samples; and

a3

selecting a first data sample representative of the current data unit based on the location of edge transitions over the previous and current data units and the location of an ideal current data sample to perform data recovery.

25. (Amended) The machine-readable medium of claim 24 wherein the representative first data sample is selected to lie in the direction of the mid-point between a first detected edge and a next expected edge and yet is adjacent to, or equal to, the ideal current data sample location within the current data unit cycle.

26. (Amended) The machine-readable medium of claim 24 wherein if no edge transitions are detected the selected first data sample corresponds to the same location as the ideal current data sample.

27. (Amended) The machine-readable medium of claim 24 wherein if only one edge transition is detected, then that edge transition determines the selected first data sample to be a sample which lies in the direction of the mid-point between the detected edge transition and a next expected edge transition and a distance of -1, 0, or +1 samples from the ideal current data sample location, whichever is closest to the mid-point.

28. (Amended) The machine-readable medium of claim 24 wherein if multiple edge transitions are detected and all correspond to the same data sample, then that data sample is selected as the first data sample.

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29. (Amended) The machine-readable medium of claim 24 wherein if multiple data edge transitions are detected and they correspond to different edge transitions, then the selected first data sample is at the same location as the ideal current data sample.

30. (Amended) The machine-readable medium of claim 24 wherein selecting the first data sample, as between two equally likely data sample locations, the data sample location most recently selected in previous cycles is chosen as the first data sample location.

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31. (New) An apparatus comprising:

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a sampling means for sampling data units of a serial data stream N times at different points in each data unit, where N is an integer value;

an edge detecting means coupled to the sampling means, the edge detecting means for detecting edge transitions between consecutive data unit samples; and

a selection means coupled to the edge detector, the selection means for receiving detected edge transitions from the edge detector and select a first data sample to represent a current data unit.

a4

32. (New) The apparatus of claim 31 wherein the first data sample is located within a current data unit cycle and a distance of N-1 to N+1 samples from a previously selected second data sample in a previous data unit cycle.

33. (New) The apparatus of claim 31 wherein the selection means selects the first data sample based on a first edge transition for either the previous or current data cycles, whichever edge transition is closest to an ideal current data sample.